

## WINTER COCCIDIOSIS IN A CALF – A CASE REPORT

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### ABSTRACT

*A non-descript female calf of about 4 month age with 30 kg body weight was affected with winter coccidiosis at Institute's Integrated Farming System Research Unit in the month of January 2015. After 4 days treatment with coccidiostat and fluid therapy the calf recovered gradually and started normal feeding on 7<sup>th</sup> day onwards. Colostrum feeding in early age and hygiene and sanitation in calf shed may prevent coccidiosis in calves.*

**KEYWORDS:** Winter, Coccidiosis, Calf

**Received:** Feb 01, 2016; **Accepted:** Feb 09, 2016; **Published:** Feb 12, 2016; **Paper Id.:** IJASRFEB201641

### INTRODUCTION

After rotavirus infection, coccidiosis might be the second most important cause of diarrhoea in calves. The causal agent is sporozoan protozoa. It may occur in young calves due to lower immune competence. Thomas (1994)<sup>1</sup> opined that coccidiosis causes severe economic losses due to reduction of feed efficiency, slower weight gain and increases susceptibility to other diseases. Coccidia usually infect epithelial cells of the gut mucosa during the developmental stage (Ernst and Benz, 1986)<sup>2</sup>. Signs of the disease

include anorexia, loss of weight, and hemorrhagic and mucoid diarrhoea (Georgi, 1985)<sup>3</sup>. In severe cases, faeces are liquid, bloody and may contain strands of intestinal mucosa (Ernst and Benz, 1986)<sup>2</sup>. Ahmed and Soad (2007)<sup>4</sup> observed that coccidiosis causes severe diarrhoea, dysentery, dehydration, depression, anorexia, weakness and recumbency in calves. Teankum et al. (2003)<sup>5</sup> also reported nervous disorders in coccidiosis.

Coccidiosis causes mortality due to severe diarrhoea, which causes loss of electrolytes and dehydration. Blaxter and Wood (1958)<sup>6</sup> found that calves with diarrhoea lost 8 and 18 times more sodium and potassium respectively, than normal calves. They also opined that coccidia destroy intestinal cells, which results in loss of blood and other fluids into the small intestine. Denatured proteins cause shifts in osmotic pressure, and alter levels of intra- and extra-cellular ions (Roy et al., 1959<sup>7</sup> and Fitzgerald, 1967<sup>8</sup>). Blood and other fluid then pass in the faeces, which are usually watery. When schizonts are mature, intestinal cells are sloughed from membranes and either leave scattered epithelial cells to cover the lamina propria or expose lamina propria with engorged capillaries. If these exposed capillaries are severely damaged, blood and plasma may be lost (Blaxter and Wood, 1958<sup>6</sup>). Animals may become emaciated, dehydrated, weak, and listless. Rectal prolapsed may result from straining without defecation (Ernst and Benz, 1986)<sup>2</sup>.

### ETIOLOGY AND CAUSAL AGENTS

Generally, coccidiosis is seen in late summer as well as in winter months in India but, it may occur throughout the year. Among the twelve identified *Eimeria species* only three (*E. bovis*, *E. zuemii* and *E.*

*abumensis*) are associated with clinical manifestation of disease in cattle. Geurden *et al*, (2005)<sup>9</sup> found that *Eimeria zuemii* is involved with winter coccidiosis but, *Eimeria bovis* is also common. Mostly young calves of one month age to one year are affected. The disease is sporadic in nature and usually causes either 'Summer Coccidiosis' or 'Winter coccidiosis'. In winter months the disease may occur due to environmental stress and limitation of host and parasite concentration due to shortage of water shed. Coccidiosis is transmitted by ingestion of sporulated oocysts. Infection is acquired from contaminated feed, water, and soiled pastures, or by licking a contaminated hair coat (Georgi, 1985)<sup>3</sup>. Generally onset of diarrhoea starts after 16 to 23 days in *E. bovis* and *E. zuemii* infection and 3 to 4 days in *E. abumensis*. It is usually caused by protozoa of the genus *Eimeria*. In winter mostly *E. zuerni* is involved in infection (Geurden *et al*, 2005)<sup>9</sup>. The disease reduces feed consumption, body weight, and feed efficiency and may cause mortality of 24% in some cases (Fitzgerald, 1975)<sup>10</sup>. Preeti *et al* (2008)<sup>11</sup> reported 25% mortality in buffalo calves in Bihar.

## HISTORY & SYMPTOMS

A non-descript female calf of about 4 month age with 30 kg body weight of Institute's Integrated Farming System Research Unit was presented on 31<sup>st</sup> January, 2015 with a history of licking soil followed by diarrhoea. Since last two days it was suffering from watery diarrhoea with little blood in the faeces. When the calf was presented it was unthrifty, discomfort and the perineal area was found blood stained. Feeding was normal but water consumption reduced. On clinical examination the rectal temperature was 103.1<sup>o</sup> F, respiration rate was 27 per minute and heart rate was found 52 per minute. Muzzle was dry and mucous membrane of eye was pale and anaemic. Faecal sample examination confirmed presence of oocyst of *Eimeria species*. Differential diagnosis confirmed absence of other infection and parasitic disease. On the basis of history, time, clinical findings and faecal sample test it was diagnosed as a case of winter coccidiosis.

## TREATMENT & DISCUSSIONS

To prevent dehydration and electrolyte imbalance treatment was started with oral and parenteral fluid therapy. Dextrose normal saline @250 ml and Ringer's lactate@200 ml was given intravenously along with Conciplex @3ml (Multivitamin). Amprolium @10mg per kg body weight per day for 5 days was given as a coccidiostat and Melonex plus injection@ 2ml intravenously was also administered to prevent fever and other complications. The calf has shown improvement from third day onwards and started normal feeding from seventh day. Clinical cases of Coccidiosis in calf were reported by Priti *et al* (2008)<sup>11</sup> in Bihar and Yattoo *et al* (2013)<sup>12</sup> in Uttar Pradesh and opined that coccidiosis affects young calves as they are immuno-compromised, highly moist surroundings and presence of oocysts in maternal faeces and it may causes severe enteritis resulting in diarrhoea, dysentery and dehydration.

## CONCLUSIONS

To enhance the immunity, feeding of colostrums in newborn calves and also hygiene and sanitation in calf shed is the paramount importance for prevention of coccidiosis in younger age.

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